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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,281	06/10/2005	Thomas Kampschreur	NL02 1289 US	1836
65913	7590	11/02/2007	EXAMINER	
NXP, B.V.			BARRY, ERIN P	
NXP INTELLECTUAL PROPERTY DEPARTMENT			ART UNIT	
M/S41-SJ			PAPER NUMBER	
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SAN JOSE, CA 95131			NOTIFICATION DATE	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary

Application No.

10/538,281

Applicant(s)

KAMPSCHREUR ET AL.

Examiner

Erin P. Barry

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-9 is/are rejected.
- 7) ☐ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear what is meant by a further row of lead frames adjacent to the first row at the side facing away from the second row lead frames. For the purpose of examination, the further row of lead frames adjacent to the first row at the side facing away from the second row will be understood as a row of lead frames that are located on the opposite side of the first row from the second. The *further* row is preceding the current *first* row in the wire bonding process. Regarding claim 4, it is not clear what is meant by a further row of lead frames adjacent to the second row at the side facing away from the first row lead frames. For the purpose of examination, the further row of lead frames adjacent to the second row at the side facing away from the first row will be understood as a row of lead frames that are located on the opposite side of the second row from the first. The *further* row is succeeding (or following) the current *second* row in the wire bonding process.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Ricketson et al. (5,307,978).

Regarding claim 7, Ricketson et al. has a wirebonding apparatus for wirebonding a plurality of lead frames, which comprises a wirebonding frame 26 (i.e. platform), an indexing device for indexing the lead frame 10 in an index direction relative to the wirebonding frame (figure 2). There is a first, stationary clamp 33 (top) and 34 (bottom) in the index direction relative to the wirebonding frame 26 (figure 2 and column 4 lines 31-50). There is a second clamp 40 (grippers on the indexing head 16) for indexing and clamping lead frames that is movable in the index direction to the wirebonding frame (figure 4). While Ricketson et al. doesn't mention the movable clamp clamping the second row of lead frames, it would be capable of doing so by use of the optical sensors 32 (figure 2) thereby permitting the movable clamp to be located exactly opposite any one of the bonding sites of the lead frame (column 5 lines 54-59). This wirebonding apparatus uses an automatic wire bonder to perform wirebonding operations at the bonding site 72. The wirebonding tool bonds the semiconductors that are gripped 40

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and indexed by the indexing head 16 and brought to the stationary clamp (column 7 lines 8-16 and figure 2 and 4).

Regarding claim 8, Ricketson et al. states that while the automatic wire bonder is performing bonding on the site, the gripping mechanism 40 releases the lead frame 10 from the bonding site 72 and repositions itself using the sensor 32 (column 7 lines 8-16 and figure 2 and 4).

Regarding claim 9, Ricketson et al. has the first clamp 33 and 34 that is situated opposite from the second clamp 40 (figures 2 and 4).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ricketson et al. (5,307,978).

Regarding claims 1 and 6, Ricketson et al. has a method for wirebonding semiconductors mounted on a lead frame 1. Included in the system is an indexing head 16, which indexes the semiconductors. There is a first clamp 34 and 35, which clamp the leads of adjacent, lead frames 10. There is a second, movable clamp 40 that is capable of clamping the second row of semiconductors because Ricketson et al. states that there is a sensor mechanism 32 mounted on the indexing head 16. The indexing

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head has sufficient X-Y information to permit the indexing head 10 and gripper to be located exactly opposite any one of the bonding sites of the lead frame 10 (column 5 lines 54-59). The movable clamp 40 indexes the lead frames and moves the semiconductors to the stationary clamp. While the stationary clamp is actuated with the first semiconductor, the movable clamp moves in the opposite direction to index the second semiconductor to be wirebonded. After the wirebonding process, the stationary clamp releases the completed semiconductor (column 7 lines 8-27). These steps are then repeated. While Ricketson et al. doesn't specifically state that the movable clamp holds onto the second row of semiconductors, it would have been obvious at the time of the invention because Ricketson et al. states that the indexing head has information to permit the head to locate an exact spot opposite any of the bonding sites (column 5 lines 54-59). Therefore, it suggests that it is merely a design choice on where to grip along the lead frame to grip the semiconductor.

Regarding claim 2, Ricketson et al. states that the semiconductors on the lead frame are separated by a pitch, P (column 3 lines 38-40).

Regarding claim 3 and 4, Ricketson et al. wirebonds the semiconductors in a continuous system so when the semiconductors are being moved along by the indexing device and grippers, there is going to be a *first* semiconductor being bonded with a semiconductor preceding it and a *second* semiconductor following. This process continues as the process moves along.

Allowable Subject Matter

7. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Regarding claim 5, among the closest prior art obtained, Rickeston et al. (5,307,978) has a method and apparatus for wirebonding semiconductors with a lead frame 10 and a wirebonding tool for mounting semiconductors. However, Ricketson et al. only has one row of semiconductors and does not teach a system for multiple rows. It would not have been obvious at the time of the invention to incorporate a system with even/multiple rows of semiconductors on a lead frame for wirebonding.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin P. Barry whose telephone number is (571) 270-3634. The examiner can normally be reached on Monday through Thursday from 8am-5pm Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sam Yao can be reached on (571) 272-1224. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EPB

10/23/2007



SAMCHUAN C. YAO
SUPERVISORY PATENT EXAMINER